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Correspondence.

Correspondents should write only on one side of the sheet. Their best thoughts and practical ideas are always welcome; no matter how rough, we will cheerfully "fix them up."

For the American Bee Journal.

Bees, Birds and Grapes.

What the Greeks or Romans may have said or written on this question fails to come down to us in history. But we find the bee and the grape side by side, occupying the most delightful portions of our globe for ages, without threat of deadly poisons or other violence, till you come to America in the year of our Lord, 1873.

Over twenty years have I cultivated both bees and grapes, consequently my affections are about equally divided between the two. On a lot of some acres I have many of the choice fruits of the climate, with grapes in profusion.

My colonies, say 60 to 80 in number are located under Apple, Peach, Pear, Quince, Cherry, Grape and Plum trees, where contact occurs necessarily every season. Being a person of leisure, my opportunities have been good to closely inspect this question. I too like Prof. Riley and hundreds of horticulturists and apiarists have seen bees cut into small fruits, especially grapes and peaches.

I too with all my family have had our fingers cruelly stung in gathering those fruits when ripe. In years departed I have witnessed my bees swarming by the thousands on my trellises, apparently threatening the entire destruction of my grape crop, to say nothing of my pears and peaches. My neighbors too, both learned and unlearned, give their unimpeachable testimony to the same state of facts among themselves.

Surely this ought to be sufficient to convict every bee in the land, and, as the lawyers say, we might here rest the case. Now I have summed up all I care about on this side of the question, and am free to say, there is not any evidence touching the vital point at issue. Who cares what bees eat

in general. All winged insects live on something. Every barefooted boy in the land can testify to bees extracting the juice from pomice laying around a cider mill, peaches, pears or grapes that have been maimed, crushed, eaten into or broken open by some other agency. But not one living soul of all the parties to this question have seen with the physical eye, a honey bee at any time or under any circumstances pounce upon a bunch of grapes or other fruit untouched by birds or insects, perfect in all respects; and with its mandibles eat through the skin or rind and open up its contents to a free banquet! And I challenge all parties interested in this controversy to come forward through the columns of this journal, not with circumstantial or superficial evidence, but with facts bearing directly upon this vital point.

The season of 1872 visited a fearful drouth on this portion of Ohio, and the bees and birds alike were hard up for provender and made sad havoc with our grapes. Some citizens counted their loss as high as twenty bushels and vigorously pressed the Village Council to expel the bees by ordinance beyond corporation limits. Acting on the spur of the moment they actually passed an ordinance to its second reading (repeating the Wenham farce) imposing a heavy penalty for keeping bees within said limits. In the mean time I had not been idle, but applying tests to satisfy our people of their error, I invited them to come upon my grounds and see for themselves the Robbins, Red-birds and Orioles that lay dead under my vines and fruit trees with grape seeds in their stomachs and mouths, as I had often shot them in the act of biting open the grapes as they hung on the vines.

Our bees were undergoing a test also—three hives had as many bunches of ripe concord grapes tacked to their fronts—that passing out and in, contact was unavoidable; on the fifth day they remained untouched save the bees hunting through and over them to find an open berry. Then I opened with my knife say a quarter of the berries on each bunch and true to their instinct they began taking up the juice before I completed the job. In about forty-eight hours they had taken up all the juice and

and pulp I had offered them, and four days later, when I removed the bunches, not a single berry had they opened, but were busily inspecting those that remained, doubtless waiting for some stronger power to lead in the business.

The bald hornet, both black and yellow, are experts in cutting into peaches, pears, grapes, &c. In handling fruits, I have seen them cut through the rind of ripe and tender peaches with great facility, thus leading the way for the more feeble insects to follow and take up their contents, and therein lies the great mistake with the hundreds of complaints. Birds and hornets are few indeed when compared with bees, and whilst they glide along opening up and inviting to the feast, are rarely noticed. The honest bees, tarries to appropriate for the supply of his home, and is seen by the million and condemned as thieves and burglars.

The most persistent and clamorous of our citizens, who had threatened bee-men with the law and our bees with strychnine were the first to come forward and thank me for what I had placed before their eyes, as the true solution to the whole question; for all who took the trouble, accomplished exactly the same results by the same means that I had used, and no further complaints have reached my ears to this day.

Would it not be much more commendable for horticulturists as well as scientists to keep their eyes open to facts as they exist, than to make and publish to the world their sweeping declarations, founded in error and so prolific in mischief, wherever they take root.

To Prof's. Dadant, Cook and Kruschke: let us cordially thank you for the light you have shed upon this important controversy and in the mean time keep your powder dry.

Athens, Ohio.

J. W. BAYARD.

For the American Bee Journal.

Handling a Delicate Subject.

In writing to our friend, Prof. Cook, we did not intend to convey the idea that Dr. Hamlin *never* used smoke in handling his bees, as the Professor has it stated in his July article to beginners; but we meant to say that he objected very strongly to its general use and only resorted to it when absolutely obliged to do so. He was of the opinion that smoke of any sort, though it quieted the bees for a time, left them in a very irritable condition from which they would not recover for some time. He imagined that from handling his bees for a long time with the use of but little smoke, he had developed in them an extraordinary peaceful disposition. Then, too, he thought the smoke stopped the labor of every bee in

the hive and left them filled with honey, idle, and sluggish for some time after its use. On opening hives in the spring without using smoke, with the greatest possible care and when the bees were gathering honey, we frequently found that the result would be a hasty retreat and an arming with a good smudge. Simply the odor of the person while standing on the leeward side of the hive often aroused them. Surely the labor of the whole hive was interrupted. By using, as has always been our custom, just a trifle of smoke on first opening the hive and then placing it near at hand so the fumes would scent the air about the hive, those same cross bees are quite easily handled, while the danger of arousing the peaceable ones is wholly avoided. The smoke seems to neutralize the scent of the poison floating in the air as the hive is opened. When properly used we have never seen any ill-effect arising from the application of a small amount of smoke. Some stocks will require more than others on the start to subdue them, and occasionally one will scarcely ever need it, yet it is indispensable at times. The greater rapidity in the handling of stocks with smoke, is a strong point in favor of its use, even if it does not leave the bees with as peaceable a disposition. We think bees once irritated will remember the occurrence longer than they would a thorough smoking, and that, by the timely use of a little smoke, it is much better to prevent their getting once aroused than to attempt the handling of them without the smoke when there is danger of their becoming angered. In proof that the smoke does not induce an ugly disposition I would state that those same colonies that were cross in the spring on the first opening of the hives at a time when they were gathering honey rapidly, can now be handled on warm days with little or no smoke and but little danger; yet they are not gathering a drop of honey, but are persistently endeavoring to take the little sweetness accumulated by some of their less fortunate neighbors. When the smoke is used in the manner described they *always* observe a proper decorum realizing that their master is at hand.

We class ourselves as "a beginner," (Northern winters have necessitated our beginning several times,) so Prof. Cook's articles apply to us; and, though we spent some time studying bee-culture under the Professor's direction and are willing in most matters pertaining to the subject to follow his excellent advice, yet in the third paragraph of his July article he has some advice which for the present at least, we shall have to put along with the advice on queen clipping,—as a total loss upon us. He says to "all who are in the bonds of single bitterness, immediately procure a

brave intelligent helpmeet." But really after writing the sentence we have come to the conclusion that it does not include us or else we are not capable of comprehending our own condition. We never became aware that we were "in the bonds of single bitterness," but always thought it *freedom*; then, too, we have always been accustomed to consider the occupation of the apiarist as a *sweet* one so we should label the condition which the Professor evidently means to describe as *the freedom of single sweetness*. As far as bravery and intelligence are concerned we presume there are many young ladies both North and South that would answer to that description, yet were we not afraid of a "severe trouncing" (see Sept. Oct. and Nov. No's. of *Bee-keepers' Magazine* for '73,) we should be inclined to say that most of them would take but little interest in the cultivation of the "little busy bee" or as they sometimes term them, "miserable stinging things." However we should do injustice did we not mention that there is one Southern Miss who surely takes an interest in bee-culture, else she would not have ridden sixteen miles horseback through the rain and on the Fourth of July to receive two Italian queens.

We well know that Mrs. C. is an excellent helpmeet, yet we never remember seeing her in the apiary. Taking the views expressed in the above statement of the case we think the Professor ought to try and have the beginner think himself sufficiently blessed if he but procure a companion who would prove a "brave intelligent helpmeet" outside of the apiary. Besides when too many "bee-folks" are around there is great danger of one's getting "bee on the brain,"—a very bad complaint which in most cases narrows the mind down to one thing and confines its sphere of action, thus making of what might be a *man*, a mere *machine*.

Edgefield Junction, Tenn.

F. B.

For the American Bee Journal.

A Lady's Experience.

I think as I am considerably indebted to yourself and the *Gleanings* for the degree of success I have been favored with. I will give you an account of the experience I have had, since the fall of 1872. I bought, at that time, 2 colonies of bees in Langstroth hives, for which I paid \$20. I increased them last summer to 4, and in the fall united my 2 nuclei, thus I wintered out of doors 3 stocks on natural stores and fed a little sugar syrup; I had no surplus honey, the season being poor. To say I was afraid of my bees would hardly express it. I almost laugh now when looking back over the last summer, to think how I have overcome many difficulties, and I al-

most dread to think of those nights of almost hysterical excitement; how the bees seemed to swarm around me as soon as I closed my eyes to sleep, and nothing but the continued angry buzz (as I imagined) greeted my ears day and night, and then those horrid stings. I had to go to our physician 2 or 3 times. (Now please do not laugh it is not polite you know, especially when one suspects you have been in a similar position yourself.) I asked him whether I had not better give up those bees entirely. I had not been well and he thought I needed something to draw my attention out of that gloomy state into which I had sunk. So I attended to the millers, around the blocks, and clipped the grass in front of the hives and watched them whenever I could. If work kept me in the house all day I often stole glances through the window, or when I rested and I read Longstroth on the Honey Bee in the evenings, (I did not know anything about bee journals then,) when I made these artificial swarms how I trembled, and how heated I got, and the little rascals seemed to know I was afraid of them. They came out all right last spring. I fed them a little, and opened the spread, as Mr. Doolittle recommended. You see I had the AMERICAN BEE JOURNAL to study then, it has been worth very much to me. I have an acquaintance who lives about 3 miles from us, who owns about 100 colonies; he has kindly instructed me from time to time; he has not used the extractor yet, but I presume he will soon.

Last March I bought 5 stocks in box hives. I transferred them very successfully. Some were in fine order; one was destitute of brood and honey, I think. I bought them just in time to save them. I gave them brood and honey from some of the other hives, and now they are my best stock, except one. I drummed them out and opened the side of the hive, on which the combs lay flat, with a cold chisel, borrowed from my husband's mowing machine. When I asked for it, he laughed and consented to lend it if I would return it to its place, and remarked that he supposed I would have all of his tools about those hives if he did not look after them. Of course it was duly returned, I do not like to hear men grumble especially when they are in the house. The first week in May I visited A. I. Root & Co., of Medina; the day was very warm but little daughter Edith and myself had a very pleasant time. Mr. Root certainly is a gentleman, and Miss Andrews took especial pains to show us their apiary, and I learned what I could. I fear I troubled them with questions, but as some Americans I have heard say, "I wanted to know." Mr. R. has a pleasant home, and a very nice family; especially

little blue eyes. We have a little fair-haired girl with a sunny smile, who the other day got a sting while adjusting the blocks as she had seen me do. She kept me awake that night, and the next morning Mr. M. remarked my wearied appearance, and said, "Wife, I do not think it pays to have that baby stung like that; I fear your bees are a poor investment." I had my own private thoughts and again bathed my baby's sting with amonia, and said nothing. Poor darling, she often puts that hand for me to kiss, and tries to tell me about it. Sir, I thought I was transferring bees; but I see I have wandered far away. I will tell you the result of those bees at some other time.

Elyria, Ohio.

Mrs. W. M.

Cause of Bee Swarming and Migrating to the Forests.

The period of incubation by the queen commences early in the spring. It is rapidly generative, and when the honey season approaches, the cells are well stocked with eggs, larvæ, &c. At this time, the working bees sally forth to labor day after day with untiring assiduity to stock their homes with a winter's supply of provender. During the busy season they intimate a negligence toward the royal blood by packing cell after cell with their wealth and rapidly contracting the queens domains—the cells for her deposits. The breeding space of the hive thus becomes rapidly narrowed, and, finally, the queen, having no empty cells, locates in some remote place, generally on or near the edge of a comb, and continues her deposits. The latter, on the edge of the comb, are eaten by the working bees. Thus situated, the royal influence of the queen is limited, and unexerted. The wealth of the community has unsettled the kingdom. The entire swarm seems to be dis-loyal. It presents the condition of a nation which has lost its sovereign. The working bees, powerful in wealth, construct royal residences or "queen-cells," in which they rear queens; and to be certain lest the royal blood should become extinct. The royal family consists of many queens, heirs expectant, and when these youthful queens are hatched, the old queen, jealous of her regal honors, undertakes to destroy her rival queens. Unable to succeed, as an army of workers surround and defend the young queens, the old queen abdicates her throne, and sallies forth from her late dominions, accompanied by her loyal subjects, old and young, whirling and buzzing in dire confusing. After all of the disaffected have left the hive they settle with the queen upon a shrub or bush. This is what constitutes "swarming."

In swarming, it is believed that a regular and permanent organization is not entirely

affected until after the departure of the swarm from the parent hive to cluster in a body, not unlike a mass convention. Immediately on swarming, the greatest tumult and confusion ensues throughout the ranks, at the same time manifesting a desire to alight sufficiently far from their late abode, so as not to be interrupted or annoyed while completing their organization and arrangements for their prospective home. Here we notice a striking peculiarity. All the bees that are capable of taking wing, young, middle aged and aged (except those that are employed in nursing the young larvæ, brooding over the chrysalis, or are out in the fields,) accompany the swarm to seek their new habitation.

Here is wisdom and order created out of disorder and rebellion. The Author of all things has "most wisely" fixed their dispositions so as to prevent the overthrow of the old colony. A large number of bees are absent from the fields, amassing honey, at the time when the swarming takes place. These, no doubt, amid the unsettled condition of home affairs, would join the new colony and leave the parent home unprotected and defenceless. The combs would become despoiled and ravaged by the irruption of those little barbarians—the moth family; the infant queens would die from want of careful nursing; the germ of another new colony—the larvæ and chrysalis—would be lost in the general wreck, without the protection afforded by these absentees, who, when they return, offer the necessary care to preserve the household with its interests.

When a new colony leaves the hive, and goes off without alighting on a shrub or bush, it is, as a general thing, those swarms which hang upon the outside of the hive. It is an unusual occurrence, that swarms which hang upon the outside of the hive leave until they have sent off ambassadors to select a suitable home for their future abode.

Now if bees are hived immediately after they have alighted, or before they have dispatched their agents to select a new tenement, they will not leave at all, if their new residence has been made agreeable, and clear of everything offensive to them, and sufficiently commodious. (For it is want of room that causes swarming.) Then, to secure the new swarm we recommend "artificial swarming."—From *Flanders's Bee Book*.

Honey is never found in the second stomach of the bee, but only in the first. The latter contains only the Myme, being the digested or partially digested food, which passes into the intestines, and the final excreta there show that the food consists mainly of pollen or bee-bread.

For the American Bee Journal.

A Voice from Pennsylvania.

In writing for the JOURNAL, I wish more would give their experience in bee-keeping, whether good or bad, that others might profit thereby; for, as I understand it, the object of the paper is to give practical information, and not to dispute over differences of opinion, until bad blood is aroused among those who should be the best of friends. I believe there are many successful bee-keepers who could give valuable information; but I fear the great fault of humanity—selfishness—may perhaps prevent them.

Bees have not done so well here this year on account of the late and cold spring; they wintered very well, but as the season advanced I found three hives did not increase, and upon examination I found them queenless, a misfortune which I see by the proceedings of the Michigan Convention; others have met with this winter to an unusual extent. The cause may be in my case the age of the queens, for I have not had a swarm for two years. My room for stands being limited, and honey my object, I have entirely prevented swarming, by giving plenty of room for surplus, early in the season and ease of access to the surplus frames or boxes. I never clip the queens wings, and my experience is that it is entirely unnecessary. My bees are of the black, or as some call them the gray variety. I expect shortly to receive several Italian queens to supply my loss, though I am not over sanguine of great improvement, for I see upon occasions that I have visited the fields to observe, that a good many gray bees are at work on the red clover, though I do not think bees like it very well, which is perhaps the greatest reason they do not visit it more, for it secretes honey in abundance; and if some can get it, others would try much harder than they do, if they liked it.

I use the Quinby hive as described in his work on the bee, enlarged to hold 14 frames 10x18 inches inside measurement, with two dividers, making the main hive, or winter house of 8 frames, with a dead air space on each side for winter protection. By removing the dividers six small 5 lb boxes or 18 small frames may be placed on each side for surplus, or if the extractor is used, the whole hive filled out with full sized frames. The bottom board under the main hive or 8 central frames is loose and joined to the side bottoms by rabbets. The side bottoms are nailed to the hive which makes it stronger, and keeps it always square and firm. The bottom board is held in place by 2 buttons underneath.

I find this form of bottom board much more convenient than in those that are all in one, as some of my first were made.

Honey board made of 6 pieces—after Quinby. I had some with holes, but threw them away. Cap fits down over all, and rests on a loose moulding frame held in place by a screw or nail on each side, and may be left down to the bottom board for further protection in winter. Top the same as the Bay State hive and loose. Portico movable. It makes the hive easier to handle and lighter. When I commenced keeping bees, I tried wintering in the cellar and lost heavily, but since I leave them on their summer stands, I have not the slightest sign of dysentery, and loose very few. In wintering, I have never yet (except when I tried the cellar) given upward ventilation, and I am not sure that it is ever necessary; it is not the true principle of ventilation for buildings, then why for bees, besides why do they so carefully close up every upper hole and crevice—even to wire gauze put over the holes or openings in the honey board, even in hot weather? I believe the true principle—as I saw recommended some time since in the JOURNAL—would be to give plenty of open space below the combs, and not open the top and let the heat pass off.

The whole of my stock at this time are natural swarms and yet I have never had a swarm leave for the woods, or leave the hive I introduced them into, and yet I never even gave them a piece of comb to start on. I incline the hive slightly forward and mostly secure straight combs.

I am located in the rural part of the 24th ward of the city of Philadelphia, near George's Hill and the Park, and my bees have a fair field for pasture. They swarm here about the first and second week in June in favorable seasons, and I have had them as early as the 10th of May during the blossom season. Our best and largest yield of honey comes from the Tulip Poplar—the queen of honey-producing trees. It scarcely or never fails as white clover and basswood some times do. Its blossoms open successively for a long time, indeed without it bee-keeping here, I think, would be a failure, although there is considerable basswood and white clover. The leaves of the Poplar frequently yield largely of honeydew in the fall. I would like to recommend them to Novice while he is planting an orchard of honey-producing trees. They grow quite as rapidly as basswood and are very handsome shade trees. Bees will not work on flour here in the spring; perhaps the reason is that they get natural pollen from the shade-tree maple, which is so very plenty, and blossoms when the weather is at all favorable as early as February.

Being near to a good market I prefer honey in the comb and find small frames 5½ by 6½ inches in the clear, 7 or 8 to a case, and glass at each end, just the thing. They sell well, are convenient to handle, easy to

get the bees out of, when full; and when the honey season is over I join those filled and sealed ones together into full cases, and extract the honey from those partially filled, and they are worth pounds of honey the next season in starting the bees to work early on surplus, and thereby also prevent swarming. By having one full sized comb in the middle of the case, and small combs or pieces warmed and stuck fast to the frames I secure straight combs and a comb to each frame every time.

"Do bees injure fruit?" I see is now up for debate. I say, no! I have grapes hanging over and all around them, and so have also my neighbors. I have watched them closely and though I frequently see them on the ground at the broken and fallen grapes and occasionally a defective one on the vine I have never yet seen them open a sound grape. I have observed that they act in the presence of, or in going over sound grapes as if they had no idea of sweets being in their neighborhood, but break one open and they then soon go for it. Three years ago one of my neighbors did complain about my bees eating all his grapes, and he said he would not get any, the latter was really true, for he got very few, but it was because they were diseased, as he soon discovered, and nearly all fell off or rotted on the vine.

"Do king-birds eat worker bees?" is another question which has been disputed, but I say from personal knowledge that they do, and a great many of them too; while I am writing, I hear them up in the air on the top of some large maple trees which surrounds my neighbor's house. They are after bees, for I have shot a number of them and sometimes their craws were stuffed with bees, and on careful examination I found most of them to be worker bees. I have also watched them in the park, (which is full of them, as they are not allowed to be shot.) They are very tame there, and therefore I could get close to them. I have seen them leave a small twig of some ornamental shrub and dart down among the white clover, take a bee, and return to the twig, first beat the bee to death holding it in its bill, and then swallow it, and in a few minutes, go for another, I can assure you I felt very much like going gunning for king-birds about that time.

Artificial combs have been talked of in Conventions and in the JOURNAL. Has any one succeeded in getting bees to work and raise brood in them? If so, can any one inform me where to send for one, as I would like to see and try them. I have an idea that they might be made of vulcanite, such as is used in making artificial teeth, as it is put to almost every use now.

At the Centennial Fair to be held in Philadelphia in 1876 almost every interest that can be mentioned except bee-keeping has

been referred to an appropriate committee. Why is this? There are several organized bodies of bee-keepers in the United States. I thought I would call attention to it through the JOURNAL, though I know there is some objection to having bees where there will be such a large number of people and horses.

Philadelphia, Pa.,

J. R. WELLS.

P. S. I wish those who advertise would state price, and not wind up with *send for circular*, for bee-keeping time is often precious, queen raisers I fear sometimes forget that in filling orders. W.

For the American Bee Journal.

Fruit and Forest Culture in Nebraska.

At this time there is great interest attached to the subject of tree-planting on the prairies. It is a well settled point that the forests of the country—vast as these are—will not forever bear the enormous demands now made upon them. As trees grow rapidly in prairie soil, it is beyond doubt that the great plains will afford sites for some of the forests of the future. Not forests where for hundreds of miles there is nothing but trees; but forests, after the fashion of the old world—except that the main incident in their creation will not be to afford coverts for game—where woodland, arable and pasture alternate with each other. In Nebraska, the settler has special inducements to plant trees. The law of the State gives a bounty in the shape of remission of taxation for tree-planting; and, in four or five years, the farmer begins to reap his advantage in fuel grown upon his land, and in the fruit ripening in his orchard. The new timber law, also, will stimulate forest culture. This law, as amended by Congress during its present session, gives 160 acres of land to whosoever will plant forty acres to trees, and cultivate the same for eight years; and this without any condition as to residence, so that a homesteader or buyer of railroad land can, when there is Government land in his vicinity, have 160 acres as a gift, if he will plant one-quarter to one of the most profitable crops that can be put into the ground. Some time ago your correspondent was favored on this matter of tree-growing, with the experience of Mr. V. C. Uttley, of Nursery Hill, Otoe county, Nebraska, who has resided eleven years on a Nebraska farm, and who, before that, was a farmer in Ohio. He says that the fruit grower need have no fear in planting on the open prairie. Apple trees flourish on the highest bluffs, care being taken, by the planting of cottonwood as a wind-break, to shelter the orchard from the highest winds. Mr. Uttley has also found the black walnut adapted to Nebraska soil; and indeed, it is naturally adapted inasmuch as on the banks of our rivers and creeks

these trees grow luxuriantly. As the result of experience, Mr. Uttley commends to the tree-planters in Nebraska: black walnut, soft maple, box-elder, poplar, cottonwood, honey locust, butternut, American and European larches and all evergreens. He has experimented with most kinds of trees; and his conclusion is that these are the best for the settler to plant—and to plant in the Spring. N. A. E.

For the American Bee Journal.
Novice's Answer.

MR. EDITOR:—We should like to make a mild protest against the position in which our excellent correspondent, Mr. Gallup, places Novice in his article on page 164. We believe that we should go to work to rear queens in just about the same way that Mr. G. would, and cannot think that our readers have understood us as ever having advocated queen-rearing in the manner he mentions. That many who rear queens for sale, do. 'Tis needless for us to refer to where we have narrated on these pages our experiments in rearing queens with old bees and small clusters, and how they laid eggs only a week or two, &c., for our readers certainly remember. Please, Mr. Gallup, be a little more neighborly. Although we agree perfectly on queen-rearing, we fear we do not quite agree on hives.

As a great deal has been said about the Gallup hive as described on page 133, we would like to add our opinion, but it is certainly respectfully tendered, and given in all candor. As to the length of the hive we have nothing further to add than what we have said heretofore, but we cannot help feeling doubtful about the double casing, and air space; on the same page, mention is made of disastrous losses where double-cased hives were used, and our friend fed on sugar syrup too. Also, the case of Mr. Elwood, mentioned by Quinby, who lost bees by dysentery when fed on syrup, was in double-cased hives, or at least something to the same effect; and without going farther, we will only mention that our neighbors, Shaw & Son., put a good colony last fall in a hive or box with double walls, filled with sawdust on top, bottom and sides, and the walls were *eight* inches thick; they died with dysentery in its worst form very early in the winter. Double-walled hives have been advocated, patented, tried, and abandoned, by bee-keepers the world over from the veriest novice up to both Langstroth and Quinby for years past, but yet Mr. G's. plan may be a little different and it is well not to be too hasty. A colony that can cover 26 combs in February, certainly should be able to keep warm, independent of any aid from the sun in occasionally warming up the sides; but Mr. G.

also mentions wintering a weak colony thus: Was this simply because bees frequently wintered well almost any way, or was it on account of the double-walls? Please Mr. G. tell us how these hives came through the spring. We cannot understand how it is, that the long hives only build worker comb with friend Gallup, when they build drone-comb almost every time with us, Medina bee-keepers, as in fact they do from all accounts we receive of them. One of the best bee-keepers in our country who uses the Gallup frames and has followed faithfully Mr. G's. excellent articles from the commencement—uses division boards constantly and would not give it up "no how;" but he cannot yet make comb in large colonies, and he has bees and brood on 20 or more Gallup frames in the long hives at this present time. Now although we have had our say, it may still be that the "New Idea Gallup Hive" will cure all the troubles in wintering which we *most sincerely* hope may be the case, for if somebody dont help, we really fear we shall forever be only a NOVICE.

P. S. We may be mistaken in saying that Quinby has abandoned double-walls for out-door wintering, if so we are sorry—no, we mean we beg pardon. While we think of it, does any one know that the Quinby hive without boxes is a veritable "New Idea," and although 'twas given to the public years ago, no one has ever even said "thank you."

If any one should find that glass for the outer walls of the hive secured all advantage from the sun and the dead air space too, remember we inserted it several years ago, but never tried it, like lots of other "blamed good ideas that our head is always 'chuck' full of." Our 16 colonies are now 31 and are bringing in basswood honey at an unprecedented rate. We have actually got almost a barrel on this 7th of July, 1874.

For the American Bee Journal.
Ants and Cockroaches.

In my correspondence and the bee journals there is much complaint against ants in bee hives, while there is nothing said of cockroaches. I have ants enough in my apiary; but the cockroaches are ten times as troublesome. The ant does not steal honey out of the hive, nor trouble the bees to my knowledge, but the cockroaches do both. All the ants want is a warm and dry place, for a nest on top of the honey board where they can enjoy the warmth of the bees below, and this is but a portion of the year, from May to October, while the cockroaches are present the year round. When you go to open a stand with an ants' nest on the honey board, it is no small job to brush them off, and when you raise the board a great many get inside and worry

the bees very much for a few minutes. Those who will take the trouble can keep the ants away by rubbing the outside of the hive with green elders or turpentine, or corperas, but none of this will keep the cockroaches away.

I find the cockroaches very thick in my apiary all summer, and in winter they are on top to enjoy the warmth of the bees, and inside of weak stands. That they do steal honey and live on it through the winter there is no questioning. In proof of their fondness for honey, I have often set out mugs and bowls with honey and water to drown moth flies at night, but the result would be about one hundred drowned cockroaches to one moth fly. Also the sweetened water that I use in introducing queens, wintering bees, etc. I can set cups nowhere in the apiary at night but the next morning it will be perfectly clean, and cockroaches found in it.

I have tried a great many devices to get rid of them, but all in vain. The best I ever tried was to go through the hives on a very cold day, and brush off the cockroaches to freeze which they readily do, but there is an evil in this plan; it disturbs the bees which should not be disturbed in cold frozen days. I have found a still better plan. I am in the poultry business, and have put a trio of Buff Cochins in the bee yard, and trained them to follow me around on warm days, and eat the cockroaches as fast as I can brush them off. This I find to be a good plan with no evil in it. I have never had a fowl eat a live bee. I have seen fowls go to the entrance of a hive and pick up a worm without disturbing the bees. I have also seen them go round a hive looking on the sides for moth flies, and I believe this is one reason why the moth is no trouble to me.

Lowell, Ky.

R. M. ARGO.

The most complete check upon robbing bees is to place a bunch of grass or wet hay over the entrance to the hive. The bees will find their way to the entrance to their own hive, the robbers will be caught by the sentinels in passing through the grass, and soon cease their pilfering.

CRYSTALLIZATION OF HONEY.—The action of light causes honey to crystallize. The difficulty may be obviated by keeping it in the dark, the change, it is said, being due to photographic action; and that the same agent that alters the molecular arrangement of iodide of silver on the excited collodian plate, causes the syrup honey to assume a crystalline form. It is to this action of light that scientists attribute the working of bees by night, and they are so careful to obscure the glass windows that are sometimes placed in their hives. Therefore, keep honey away from the light.

For the American Bee Journal. Gallup Again.

Without doubt the Extractor has killed its thousands of stocks of bees. Now, Mr. Editor, publish the above without explanation, and, oh, horror of horrors, how Gallup would catch it. In many cases it has been used without the least particle of reason, and the bees have all died of dysentery, or that terrible bee disease. Perhaps we could illustrate better by telling of one of our mis-moves a number of years ago.—Soon after learning to drum out bees, we made a grand discovery. Mind that there were then no bee journals, or perhaps we, *Novice-like*, should have been caught giving instructions to others, when we knew nothing ourselves.

Right here, allow me to say for Novice's consolation, that we passed through the same ordeal that he is now going through. That is, we were very forward in giving our knowledge to others, before we had any to spare.

But to our story. We thought that we could drum out our bees in August, place them in a new hive, (we used the old box or chamber hive in those days,) and in 21 days the young bees would be hatched and we would drum them out also, and unite them with the others; they would then fill the hive and winter, and I could have the old stores, etc. This was a wonderful discovery and I, *Novice-like*, spread the news of the discovery far and near. But by the month of February these bees had a terrible disease; in fact, they all died of dysentery, (fine stocks). They had honey enough, but it was made or gathered too late in the season, consequently was not properly evaporated or matured, and the result as stated above.

Now, is it not a fact that many, in order to get a large yield of honey, extract too late in the season? They have the necessary amount in weight but not in quality. You will recollect of one person telling in the back numbers of extracting late in the fall, and their filling up and that all died with dysentery. That person requested some one to give the reason why they died, and we told him he had given the reason himself, etc. Now, if we winter bees on honey we want that honey of good quality and made in the proper season, and when the bees are raising brood rapidly, and have large quantities of bees of the right age to properly manufacture or evaporate it.

Here is another question for our consideration. The two-story hive has been lauded to the skies by Novice, when practice and experience has taught us and others that it is entirely in the wrong form, as the bees are not able to properly evaporate

their honey in cool weather and raise brood as rapidly and abundantly as they ought to in a hive of the proper form. In the "New Idea" form we have the brood nest always warm, consequently breeding can be carried on rapidly, and honey stored at the same time, without the animal warmth escaping into an upper story and away from the brood nest. Now, if we extract all the honey on the 15th of August in our climate except from a few central combs in the brood nest, we have room enough for the bees to breed and store from 80 to 150 lbs of honey without any more disturbance for the season. This honey we leave in the hive until the bees begin to gather rapidly the following season, and it is stored where it is convenient for the bees to get at and still does not keep the brood nest cool or take away one particle of warmth from the brood nest. The consequence is that we have no feeding to do at any season of the year, for it is a well-established fact that a strong powerful stock of bees with abundance of store do not need any stimulation to induce them to breed early enough for all practical purposes.

Now, here is another consideration. A neighbor of mine uses box hives 14 inches high and 18 or 20 inches square, and his bees have not died or had the dysentery while the neighbors' bees have died by the thousands; he winters on summer stands. My impression is that the injudicious use of the extractor, two-story and small standard hives has killed thousands and thousands of stocks of bees. Why did not my bees have the terrible disease that has been so prevalent all over the country? There has been other causes besides the injudicious use of the extractor to kill the bees. Years ago we lost heavily at different times and at that time we were not willing to attribute our losses to our own ignorance, but it was a fact nevertheless. Whose advice is the best—the advice of those who fail, or that of those who succeed. Let the "Novices" decide for themselves.

Yours truly,
Orchard, Iowa. GALLUP.

For the American Bee Journal.

Gallup and Queen Rearing.

Don't set it down too positively, friend Gallup, that "abundance" of food of the right kind and "abundance" of warmth are *all* the requisites of successful queen rearing, simply because you don't see other conditions present when a full colony of bees are raising queens at will. We should remember that a colony of bees are a whole—they are one individual, the same as a swarm of cords and nerves that form the human body are one, except they are separable for a short time. Taking this

for a basis, is not the whole colony the parent of the queen as well as all the offspring? We all know that animal magnetism is the essence of animal life, and that parents greatly endowed with this life-giving principle will produce the strongest offspring, other things being equal. Now, would it not be natural to suppose that a full colony of bees would be sure to produce the best queens. I believe the best queens we get are those reared in cases of supercedure when the *whole* colony remains together till the *hatching* of the queen, at least.

"Novice" says, on page 53 of *Gleanings* for May, that, "to be sure many will say she can't lay eggs, and brood can't be reared without more than eighty-two bees.— But why? Ans. A lack of "animal magnetism." Now, friend Gallup, don't accuse us of having been only six years in the business; for we see you criticize Mr. Quinby who has been engaged in apiculture much longer than you, and has had no "big farm" to take his attention either. I am no stickler for old methods and systems, nor do I believe that queens reared at will of the colony are as good as those properly reared at the will of the apiarian. I think I can show that prolificness in the mother-bee, beyond a certain limit, is of no value. The *quality* of the bees in our apiary is what we need, and not a great number from *one queen*, or a few queens.

Apiarians have dreaded the swarming impulses of their apiaries worse than the moth, and this I believe has been owing to a limited knowledge of the science. We have known how to take a profitable advantage of the powers of bees, so long as this impulse did not interfere, but when it did, we were left in the dark and our plans thwarted. When we understand how to *use* this impulse to the best advantage, we shall foster and encourage it. Then shall we appreciate the Italian bee in its broadest sense.

Now a word for "Novice." No apiarian has done more for me than he. I look upon the changes of his mind, we hear so much about, as evidences of his progressive nature. The above is simply *our* views. Let the watch-word be "onward" throughout our apiarian lines, and hence let us speak our minds freely, not for spite, but for the advancement of our pet science, and let us change our minds *publicly*, as often as we do privately, which will be often if we observe closely and experiment largely. Convictions do not come at will but are always forced upon us.

Dowagiac, Mich. JAMES HEDDON.

The bees throughout the world, as known collectively to the richest cabinets, number about two thousand species.

For the American Bee Journal.

Our Honey Markets.

MR. EDITOR:—I wish to ask through the JOURNAL whether other apiarians, who ship honey to any amount, have any difficulty in getting returns. I have had considerable, and it is only because I feel it a duty due to my fellow bee-keepers that I now make public several transactions with honey merchants. For over a year there has been an advertisement in the AMERICAN BEE JOURNAL of Baumeister & Co., wanting 10,000 lbs. of extracted honey. In answer to that advertisement I offered to buy them honey, and have their reply stating what they would pay and what commission they would give for buying. I bought considerable, and with some of the product of my own apiary, collected about six barrels, and wrote them to that effect, stating the quality of each barrel whether basswood, clover, mixed or fall honey. By fall honey I mean that collected principally from bone-set, buckwheat, fall astor, butter-weed, (or as some call it, fire-weed,) golden rod and a number of other honey plants of minor importance, all blooming at so nearly the same time as to render it difficult to say which flavor predominates in taking a sample from a barrel. At the time I wrote I also said that I had had an offer of 15 cents per pound for it in the warehouse but as I had written to them previous about it, they had the right to the first choice, and if they wished to take it at that price I would send it, and in reply was ordered to send it on. But upon their receiving it they wrote saying that the honey was not as represented. In marking the barrels I did not rely entirely on my own judgement but on the judgement of two other apiarians, to whom I can refer; but the trouble came afterwards. I looked for money but none come. After waiting a month or two I went to Chicago to see about it and found they had sent \$200 in a letter addressed with wrong initials. That being made clear and satisfactory, they faithfully promised to send me \$100 the following week, giving also a note for \$150 payable in one month, and \$20 in cash. The honey amounted to \$470. Instead of the \$100, only \$50 came and that two weeks late. The note was paid on time; but the \$50 they now refuse to pay, saying they will only give \$25; and it is three weeks since they offered that and I accepted it, but still they do not even send that.

I have given a rather lengthy account of this one transaction, as I would like to know if any others have had business with this firm, and whether they do business generally in that style.

I also sent a bill of honey to J. W. Winder of Cincinnati, amounting to \$160; he

complained of nothing but "panicky times." When the money was due I received \$75 from him, but for the last few months cannot hear a word.

I wrote to the Chicago Honey House, 360 Wabash Avenue, asking what they would give for fall honey, and stated that I had a barrel (I use 500 lb barrels) to dispose of. They offered me 15 cents, if clear. I shipped it, saying it was candied, and now they do not want it at all.

Who are the staunch men to whom we can ship honey and feel sure of having speedy returns. We can better afford to sell for 13 cents cash, than wait six months at 15 cents, not knowing whether it will ever come.

WM. W. BIRD

Ohio.

For the American Bee Journal.

Our Opinion of Artificial Queens.

DEAR JOURNAL:—Methinks your contribution from S. W., Mo., is far and few between. Last fall, I predicted that many black bees in log gums would starve. So they did. Mine (Italians) all wintered, and have made some surplus. I like Gallup's article in the July No., page 164, on artificial queens, and commend it to beginners in bee-keeping. I would like to have the line of distinction between natural and artificial queens drawn upon a little different ground. I think natural queens are those produced by natural swarming and none others. Queens that are produced from any and all other causes are artificial.

If we take the queen away from a strong colony of bees in warm weather, when they are getting plenty of stores from the field and have bees in all stages of existence, from the egg up to the field workers, we are apt to raise good prolific, well-colored queens, large size and long lived; but they should know no scarcity of food. If they need it, they should be fed daily the first eight days. Such queens as these we call artificial. Gallup calls them natural. Such queens as Gallup calls artificial, I do not take any stock in. In fact I do not have any confidence in any of those low-priced queens, and I do not believe the expert bee-keeper can afford to raise good queens (or what we call good queens) tested and warranted for \$2 and \$3. He would do better to devote his time and force for surplus honey. If those cheap queens are thrown on the market, it will have a great tendency to hinder the introduction of the Italian bee. I would much prefer paying \$5 to \$8 for a queen that was actually worth that, than to pay \$2 for a cheap one and run the risk of being totally disappointed.

I beg leave to differ with Mr. Hazen, on

page 163 of the AMERICAN BEE JOURNAL, in regard to over stocking the field. Probably we in the West are differently situated in respect to bee pasturage to what they are in the East. When we have good honey flowers here, we never have bees enough to gather all, until rain or dry weather stops them from work, and we should always be prepared with our colonies, strong and large enough, in case of failure in flowers, to secrete honey; for such colonies will live when others will starve to death, and more especially if they be Italians.

E. LISTON.

Cedar Co., Mo.

For the American Bee Journal.

Double Story Hives.

While bees are storing honey rapidly they should have more room within their hives than at other seasons. They need this both to prevent swarming and to secure from them the largest yield of honey. A given number of bees in one hive will store much more surplus honey, than the same number divided out into several hives. One of the most important rules to be observed, where surplus honey is the object, is to *keep the stocks strong*. The queen should have all the combs she can supply with eggs, and the workers as many as they can fill with honey. When the hive is in this condition, and the extractor is freely used, there is little if any danger of swarming, and an abundance of honey will be obtained.

Ordinary single-chamber hives contain about 2500 cubic inches of space. For medium sized stocks in ordinary seasons of the year, this will be room sufficient; but when the flowers are secreting honey profusely, and the queens are laying freely, twice that space should be given them.

Some intelligent bee-keepers hold that all this room should be furnished in a single-story hive. Their theory is that the workers will extend their construction of comb, and the queen her deposition of eggs, from the centre to either side, more readily than above or below, this may, or may not, be correct; I am not prepared to deny or affirm. But I have met with no difficulty in getting either the queens to lay or the workers to work in either upper or lower stories. I have had no experience with these large single-story hives. It seems to me, however, that whatever advantages they may have in other respects, they must be very cumbersome and unwieldy when it becomes necessary to move them. I should think it would also be quite difficult to contract the space within them to suit a small stock, or to winter even a full stock.

I have been using for several seasons a double-story hive, which has given me

entire satisfaction; and before giving a brief description of it, I will say that I have no "axe to grind" in doing so, as there is no patent on it, so far as I am concerned and I keep none for sale. It consists of two boxes of the same size, set one on top of the other, each filled with ten frames. It is cheaply made and easily handled. The bees are wintered in the lower story. When they become strong in the spring, the second or upper story is set on, and to induce the bees to work above, without any delay, a few of the frames of brood are put in the upper box. The work their goes on in both stories as well as in one before. No honey brood or portion of any kind is used between the stories.

My hive is modified after the Langstroth, but, I think it is more convenient and less expensive. Each chamber or story is, by inside measure, 18 in. long, 14½ wide and 10 deep. I have a 4 in. portico in front of the lower story, but while this answers some good purposes it is not essential. I use poplar lumber and have it dressed to ¾ of an inch in thickness. The sides are 10 in. wide, the front end 8½ and the rear end 9½. Both end pieces are set with their tops ¾ of an inch below the upper edges of the sides. On these ends are suspended the frames. The upper piece of each frame is made first 19 in. long, the ends of which are beveled off to prevent interference with the ends of the upper story.

The upper story is made without bottom and fits nicely on the lower. Each end of it also drops down ¾ of an inch below the edges of the sides. The inside lower edges of these ends are beveled off so as to fit down over the ends of the frames in the lower chamber. Strips are nailed across the ends of both stories to strengthen them, and to furnish handles by which to lift them.

A cap or cover is made to fit either story, by nailing strips around and under the outer edges of a board about 18 in. wide and 22 long.

Anyone that can use a saw and hammer can make these hives, and I consider them as good as the best. I have never had a swarm of bees from one of these hives since I have been using them. This season I have had 26 in use, and have taken from them 110 gallons of honey. From one hive I have extracted 14 gallons, and taken about a dozen full cords of brood to build up weaker hives. They are all now in good condition, and well supplied with honey. I have already started 26 nucleus hives, and as fast as the queens become fertile, will build them up to ten frames. This will reduce all the double-hives down to single chambers. I do this now because the honey season is over with us. We may have a little in September, but cannot calculate with any certainty on that.

Charlestown, Ind.

M. C. HESTER

For the American Bee Journal.

My Management of Bees.

My apiary is built slightly facing the southeast, in order to have the morning sun. The bee stand is built upon a post, within the enclosure, with no connection with outside parts; this prevents a direct communication to the hive, by ants and other preying insects.

Ants are sometimes troublesome—to prevent them crawling up the post, a band of raw cotton, passed around the post of the stand, will make an effectual barrier.

Hives.—I have used the common hives for years, also, common hives with surplus honey-boxes; also, the Langstroth Movable Comb, and many other popular hives; am now using the American Bee Hive, which I think superior to any that have come under my notice, and have been taking 100 per cent. more honey from them than from any other kind. In the spring, I overhaul all my swarms, cleaning out all litter that may have accumulated during the winter, and occasionally give them a little honey, which seems to encourage them to begin their labors; and if any surplus honey has been taken the previous fall I seldom replace the empty boxes till the swarming season is over—too much room prevents swarming.

Swarming.—Artificial swarming is much spoken of, and perhaps profitably practised, but I prefer natural swarming, for I am confident that it is much better for the parent stock as well as the young swarm. Swarming usually begins in May, about the middle, and sometimes earlier; the first swarm needs little or no care, it being generally strong and vigorous, and goes to work with a will, frequently surpassing the parent stock in surplus stores. The second swarm appears about 12 days later, does not number as many, and seldom gathers more stores than is necessary for its winter use; occasionally a third swarm issues, weaker in number, and having less time to provide for themselves; they need more care than rest, though I have at times carried them for miles, where buckwheat fields are numerous, and they have turned out more than self-sustaining. I generally weigh all my hives before using them, then when occupied by the bees, on re-weighing them in the fall, I can tell whether they have sufficient honey for their subsistence. A swarm and stores, independent of the hive, should weigh at least 25 lbs.; when I find them below that weight, I always feed them during the winter. Honey, of course, is the best food, though some make a syrup of white sugar, or use sugar candy. In giving them honey, it should be placed within the hive where they can have easy access to it; if it is in the comb, where I

have a movable comb hive, I place it in the frames, but strained honey should be placed in a small wooden trough, (tin or metal will sour the honey) then at intervals I place straws so as to give them sure footing, and thus prevent them from falling in the honey and drowning. They require more food upon a bright, warm day; during the extreme cold days they are in a state of torpor.

When swarming is over, I put the surplus honey-boxes in their respective places, and take them out about the 1st of October or even earlier, taking care to leave sufficient for their maintenance during the coming winter; at times, I have taken from 40 to 50 lbs. of beautiful white honey from a single hive.

B. R.

For the American Bee Journal.

Artificial Swarms, etc.

On page 148 friend Dorr gives his method of artificial swarming. We have tried that way too, but do not like it, for it breaks up the stocks so badly, it gives them too much empty space.

Here is our plan. Say you have five stocks; go to four of them and take out two frames of brood and honey from each, shaking the bees back into the hive, and put in an empty hive; then move No. 5 to a new place and set your hive filled with brood combs in its place; all flying bees from No. 5 will enter the new hive and soon be building queen cells, unless you can give them a capped queen cell, as friend Dorr says. No. 5 will soon have more flying bees, and will hardly know they have been molested, for while the young bees are hatching and eating honey, the queen will be filling the empty cells with eggs before the older bees can fly to fill them with honey. You can give each stock an empty frame or two if you like, but to give a new stock one-half of the hive in empty combs is too much, I think.

And still another one, which I think is even better. Place your empty hive where you wish it to stay; go to your four stocks as before, take 2 or 3 frames of brood, according to the amount they can spare, and shake the bees off on the alighting board of your empty hive, being *sure* you have not got the queen. The flying bees will rise and go back to the old stock, while the young bees will travel into the empty hive where the frame of brood is placed after shaking them off. Give them 6 or 8 frames of brood and honey shaking each at the front, and then if you have not bees enough to suit, take out more frames from old hives and shake off bees till you have enough, giving the combs back to old stocks. If you have a queen cell to give the new stock, all right, if not, they will

attend to it themselves. The young bees will not fight each other, as we have used Italians, hybrids and blacks all mixed together.

BEEES AND GRAPES.

Some of our hives stand close to our grape-vines, have had them under the vines and none over 5 ft. away, and we never yet saw bees touch them. It's all *bosh*. Roll up the evidence, friends, and let's "squelch" the poisoners in their infancy.

BEE QUILTS.

To those who use or are going to use quilts for their hives I would advise them to *not use cotton-cloth*, but take woolen; it is more porous than cotton and will not take fire from sparks when bees are smoked with rotten wood, etc. If you use cotton you may step out into your bee yard some day and find one of your stocks doing a land office business in the way of a bon-fire.

Since June 15th we have had no rain and things are getting pretty dry, but bees are getting honey, for combs are nearly full that were extracted on the first of this month.

W. M. KELLOGG.

Oneida, Ill.

For the American Bee Journal.

Caution!

Believing it the duty of everyone to expose fraud wherever found, I harewith submit the following—my experience—to the consideration of my brother bee-keepers: Last season I obtained 1050 lbs box honey, and wrote C. O. Perrine, for the purpose of making arrangements for the sale of the same.

I gave a clear statement of the condition of my honey. In the lot there were 12 Adairs sectional boxes—14x20x5 of $\frac{1}{4}$ inch stuff, with glass on both ends. Most of it was put up in boxes 5x5x6, glass on four sides, with $\frac{1}{8}$ inch stuff for top and bottom; perhaps about 20 were of the same dimension, with glass at two sides—the other sides of $\frac{1}{8}$ lumber. The honey was about one-half Linden, the other half Buckwheat.

I stated in my first correspondence with him, that I wanted *gross* (that is, weight of boxes included) weight for all my honey. In answer to my letter he stated he would pay 27c per lb; and gross for small boxes. In my reply I stated that my large boxes contained not as much lumber per pound of honey as the small ones, and as they were as convenient for retailing, if not more so than the small ones. I wanted gross for all. No reply was made touching this point, and my honey was sent supposing this understood.

About *two weeks* after shipment, I received word that honey was received all

"O. K." (he promised to pay within a week at most, after receipt of honey) but busy times made it impossible for him to get at the tare. About two weeks after this, and after I had written stating I needed money bad, I received a check of \$100.00. About four weeks after this, I received \$60.00 through a draft, and four weeks later another \$50.00 by the same process.

He finally wrote asking if 25c per lb would do me, the honey being not as bright as he supposed; and as prices *then* were, he would be glad to *sell* the *Buckwheat* for that price. I replied no, for he had but offered a medium price—honey being then, when the bargain was made—25 to 30c per lb. I stated further, he should have made this request in the first place; and that I thought I had waited long enough for my money, without being compelled to lose two cents per lb on it. He finally sent the balance. On figuring up, I found I was about \$25.00 behind; that he kept back in deducting boxes to that amount. I wrote him in regard to this, and threatened to expose him if he did not do the fair thing—I received no satisfaction.

I would advise bee-keepers to beware. Tardiness in payment is sufficiently annoying without indulging in such trickery as I have enumerated above.

If Perrine did not intend to pay me for gross weight, he should have said so, seeing I insisted upon it. "Be not deceived by imitations!" he puts at the end of his advertisement. Verily I say, beware of such imitation! Adam Grimm hit him a severe blow and I hope this addition will either make him a fair dealer or force him from lack of patronage, to shift his business into more prompt and reliable hands.

Berlin, Wis., J. D. KRUSCHKE.

P. S. Have just received a statement from Mr. Dadant to the effect that they are always paid *gross* for honey in Adair's sectional boxes.

J. D. K.

For the American Bee Journal.

Things Seen and Unseen.

WHAT I HAVE SEEN.

I have seen in the bee journals a great many reasons why the bees die. Some are all right, but nearly all wrong! I have seen bee-keepers so anxious to obtain surplus that they robbed bees in the fall, and the consequence was the bees died of starvation during the winter!

I have seen bee-keepers so anxious to multiply, they kept their stocks all the time in a weak condition; but the result was less brood and little or no surplus!

I have seen an empty comb put in between the brood combs in order to hasten matters; but I have seen it act as a division board; the queen remaining on one

side and the bees building queen cells on the other, thus causing trouble in the camp!

I have seen a ten-days queen live just as long, and proving equally as prolific as one hatched in the usual time, though the former are not to be recommended!

WHAT I WOULD LIKE TO SEE.

I would like to see bee-keepers when reporting how much honey they obtain from a single hive or number of hives, be just as particular to state the size of their hives, for in my humble judgment there *is some* difference between a hive holding ten frames and one holding fifty!

I would like to see bee-keepers when reporting how much surplus they have obtained, to give *some* credit to providence and not all to their *own skill* or particular *hive* they are using!

I would like to see every contributor to the BEE JOURNAL when he errs either in judgment or practice, to early and freely confess it! Why? Because it is noble and manly!

I would like to see a good feeling prevail amongst bee-keepers, if they do cross each other's path once in a while, and also

I would like to see the managers of the BEE JOURNAL report before the year is out, that no man (nor even a woman) owes them anything—not even a grudge! So mote it be!

ARGUS.

For the American Bee Journal.

Transferring Bees.

Many persons having the old box gum, and wishing to use a frame hive, are puzzled to know how to get the bees from the old gum to the new hive. It may seem to be a terrible job, but the operation can be performed in an hour, and if care is used, without a sting, even if working without a veil or gloves. The best time to transfer is early in the spring, when the fruit trees are in bloom, though it can be done any time during the summer, and the combs be soft, but you will have to feed them. All the tools that are necessary are, a hatchet, cold chisel, and a long knife. Select a room, or an out-house, with one window. Underneath the window fix a stand or table about five feet long. Take an old sheet, double it up to about the size of the frame, to lay the comb on, so as not to bruise the cells. Lay your tools along side, and some sticks, made about one inch longer than the frame is wide, and three-eighths thick; also rubber rings, such as are used on car tickets. Fine wire or string will do to tie the comb into the frame, but not as good as the sticks. There are many ways of fastening the comb into the frame. After transferring one hive, you can use your ingenuity. Se-

lect the gum, blow smoke in at the entrance, and rap briskly on the outside of the hive for a few minutes, until they set up a hum of peace. Remove the hive to the room, and leave a box in the place of the hive, to catch all returning bees; invert the hive, and cut out the side of the hive parallel to the comb; the bees will get out of your way; lay two sticks down on the quilt, and a frame on top; cut out a comb; brush all the bees off; lay it on the frame, and cut it to fit; lay two sticks on top; spring the rubber rings over the ends; raise the comb, and place it in the hive, having it at your right hand; continue to remove all the comb in a like manner, using care that you put the combs in the new hive in the same rotation that they were in the old hive. Shake all of the bees out of the old hive in front of the new one, and they will all go in like a new swarm; or, after placing two frames in the new hive, brush all of the bees adhering to the comb into the new hive, and by the time you are through, nearly all of the bees will be in the hive. After closing up the hive, let it stand for awhile, and if the bees are still quiet, you may be sure the queen is in. If she is not, the bees will run all about the entrance and over the hive, hunting for something, as they are, for their queen. Look around for a cluster of bees, pick them up with a dipper, and put them in the hive, and if the queen is with them, all will soon be quiet. Return it to its old stand, shake out the bees in the box in front of the hive, and they will all go in. In three or four days after, open the hive, pull off the top rings, and pull the sticks out, as by that time the combs will be fastened to the frames. They are all right now. After performing the operation you will be surprised to see how easy it is, and how quiet the bees are at being thus stirred up, and you will also see the advantage of the frame hive.

A. J. MURRAY.

For the American Bee Journal.

How to Introduce Virgin Queens and make New Colonies.

Take your Queen Nursery and put into each cage, between the tins, a few cells of sealed honey in new comb, or a small piece of sponge, well saturated with honey, for feed for the hatching queens, so that they will not starve if the bees fail to feed them. Now cut from the combs as many queen cells as you have prepared cages in the nursery, and suspend one in each cage with the sealed end downwards, as found in the combs, remembering always never to jar or compress the cells in any way, and also to see that you have good, large perfect cells, and generally not cut from the combs before the 9th or 10th day.

The cages of the nursery being thus supplied with feed for the queens when they hatch, and a good, perfect queen cell in each, the doors of the cages are to be closed, and adjusted in the nursery frame.

Then remove from a strong colony one of its centre combs, and introduce the nursery into its place, to remain until the queens emerge from the cells. As they emerge, each cage containing a virgin queen, may be removed from the nursery and placed in one of the adjacent combs of the same colony, on either side of the nursery, by cutting out a piece among the brood large enough for the cages. Then each comb, separately, with the cages and all the adhering bees, is removed and placed in a new hive between two combs of hatching brood, taken from other colonies, the bees being brushed off. On the next day, near sundown, each of these new colonies so made may be opened, and the combs, bees and queens, well sprayed with perfumed sweetened water, and the queens set at liberty by opening the door of the cages, she can pass out while the bees are engaged cleaning the spray off of themselves, combs and queen, and receive her kindly, being of the same scent, and hatched in the same hive. As soon as the queens become fertilized and laying, add more combs of hatching brood from other stocks to each new colony, brushing the bees from the combs added back into their own stands, repeat these additions of brood and combs until your new stocks are complete. Thus we can raise and introduce virgin queens into new colonies with general safety. The cages can be removed from the new colonies in a day or two after the queens are set at liberty. While doing this you can see if your young queens are all safe.

If we use all black stocks in this method we can soon convert them into Italians, if we use none but pure Italian queen cells. Each comb in the nursery colony becomes the active workers in the new ones, and the brood from other black colonies adds to the supply, until the new queen's brood begins to hatch.

J. DAVIS.

Does Bee Culture Pay?

When any new enterprise is started or any old employment of man which, in this fast age to make money in large sums, has become neglected, and the thoughtful man suggests its revival under the advancing help of science, the question is at once, "Does it pay, or will it pay?"

So it is with bee culture. It has paid all who have given it proper attention, and it pays well even those who give it only heedless care, and keeps bees more as an amusement for old age or young girl or boy in

the family, that their attention may be sometimes agreeably taken up in watching this laborious and ingenious little worker, whose labors furnish such a luxury as honey. We give the following concise answer to this question from one of our exchanges:

"We believe that no stock upon a farm will pay better than a few good stocks of Italian bees. They provide for themselves without giving their owner any trouble whatever, and with very little attention at certain seasons of the year and with suitable quarters provided for their health, shelter and workshops, they will yield a rich crop of one marketable honey which will always sell at a good price.

"If there is a land on earth which should flow with milk and honey it is ours, and yet owing to our own improvidence, there are very few farmers who have either milk or butter to sell, or even to supply their own wants in abundance, and scarcely one in a thousand who has honey for sale. Tell them that they ought to keep a few stocks of bees and raise honey, and one will tell you "his grandmother tried it once when he was a chap and she had no luck with them." Another will say he does not want to have "his wife and children stung nearly to death by the darned things." Another will tell you how he "knew a man who has kept bees for the last fifteen years and never made a cent from them." Another will say he has more than he can do now (raising cotton, we suppose, on all his land, and hauling bought hay and corn for his stock,) and cannot afford to "bother with bee gums."

"The management of bees is very simple, and can be easily learned. A little looking after in the morning when they fly, and in the evening when they return, a little patch of white clover and buckwheat, and a few plants suited for bee food, and a little protection in the winter, are all that is needed."

—*Baltimore Sun.*

For the American Bee Journal.

Bee Keeping.

We were requested to make a statement relative to the average yield of honey procured by us, per colony, during the time we have been keeping bees, but not having kept any account of honey taken, except for the past three years, and during that time more by estimates than by actual weights, we cannot give such a report as desired, though the following estimate may be of interest:

1871. Average per colony, 40 lbs.; average sales, 22 cents per lb.; average value of honey per colony, \$10, (box honey).

1872. Average per colony, 43 lbs.; average sales, 22 cents per lb.; value of honey per colony, \$9.46, (1 box, 1/2 extracted)

1873. Average per colony, 16 lbs.; average sales, 25 cents per lb.; average value of honey per colony, \$4, ($\frac{1}{2}$ frame, $\frac{1}{2}$ extracted).

The most box honey taken any year from any one hive, 98 pounds; that was in 1871, and we are confident that twice that amount could have been secured just as well, but our bees then were all in small hives affording poor advantage for supplying them with boxes. This year promises to be a good one for a honey crop, and with our present increase in colonies, (natural and artificial) we hope to be able to make a good report for the current year.

One of the main things in successful bee-keeping is, to *keep all the stocks strong*. If you get very anxious to have colonies in abundance, send for a "bee man" who is the representative of some new-fangled moth-trap, or some other remarkable device by means of which the bees are

"happy and glorious
O'er all the ills of life victorious."

and have him divide each one of the old stands into four or five new ones, but you will be likely to pronounce bee-keeping in Kansas a humbug as your bees "play out" and leave you debating the question in your own mind whether "it is better to be born lucky than rich."

Artificial division, done in a proper manner and at a proper time, is a very good way to increase the number of colonies, but queens or capped queen cells, from strong colonies should be ready to give each divide, and we aim to improve the stock at the same time, by procuring queen cells made in strong colonies and noted for their good traits as honey gatherers, whether they be hybrids or Italians. This year we have secured a couple of cells from one of our neighbors, from a colony (and he has several colonies like it) that seems to be a cross between the Italian and an extra large gray looking bee, which kind with him gathers one-third more honey than his other bees. We make new colonies by placing three or four frames containing brood, but no old bees, in an empty hive, first placing the queen cell in one of the center ones, then we remove one of the strongest colonies, six or eight feet away on a straight line with the front and facing the same way, then we place the new one on its stand. This is best done when honey is abundant and in the middle of the day when there are plenty of bees out at work, and by night there will be a strong swarm and the hive removed not materially injured.

Thus we make a third one from two, or a third one by taking a sheet of brood from each of several different hives. As a means of strengthening weak colonies a prominent bee-keeper suggested the idea to us of exchanging the queens of the weaker ones

with those of the stronger, as with him queens not thought to be very good were generally thus rendered more prolific.

There is considerable difference of opinion in regard to the comparative merits of the Italian and the black bee. We have several of what were said to be the pure Italian, but the queens were all short-lived. As for profit in honey we doubt their superiority over the hybrids. The hybrids seem to be very excellent bees and during a year of scarcity will do much better than the blacks. Last year fully demonstrated this fact to us. It seems that almost any kind of a change from long continued in-and-in breeding, is beneficial.

Kansas.

M. A. E.

A Visit to a Bee-Hive.

DESCRIBED BY THE FAIRY FLYAWAY.

"How doth the little busy bee
Improve each shining hour,
And gathering honey day by day,
From every opening flower?"

"How doth she, indeed?" I said to myself as I awoke one bright morning.

The thought was suggested by a noisy bee, who waked me by trying to enter my lily-bell, and I resolved that I would look into the matter. So I flew out of my lily, and to the nearest hive, to make inquiries.

Bees are high-spirited and quick-tempered persons, I know, but a fairy can make her way anywhere.

The hive was a neat building, pleasantly situated in an orchard. On one side a clover-field, full of perfume, and on the other a gay flower-garden.

At the door of the hive I was met by a number of sentinels, one of whom addressed me rather sharply, with "Who goes there."

"A friend," I replied, "who wishes to learn something of the ways of the bees, and how they make honey."

"Your passport," said she.

"I never thought of such a thing," said I.

"Do you intend to go into the honey business yourself?" asked she.

"By no means," I replied; "I am the fairy Flyaway, and only want information and amusement."

"I will send a messenger to our Queen," said the sentinel.

The messenger soon returned with the Queen's permission to go entirely through the hive, escorted by one of her own body-guard, excepting into the royal apartment.

I then entered the doorway, where I was greeted by my guide, who gave me her name, Deborah, and ushered me, with a grand flourish of her wings, into a wide gallery passage.

In the middle of the hive I saw a long string of bees, reaching from the roof to the floor, each bee clinging to her neighbor, and remaining motionless, while other bees ran up and down, as though upon a ladder.

"What is that?" I asked my guide.

"A bee-rope," she replied, "a short cut from the top to the bottom of the hive."

I remarked that I thought it might be some kind of dance.

"No," said she. "In the winter when there is no work to be done, we sometimes dance in the sunshine before the hive, but never at any other time. We are too busy."

This seemed to me rather sad but I did not say so.

In the gallery we saw bees hurrying about in all directions, too busy to notice us, and never disturbing or interfering with each other in the least.

"These are our workers," said Deborah.

"About how many of them are there?" I inquired.

"There are 20,000 of us all told," she replied, "one Queen, or Mother-bee, blessings on her majesty! some hundreds of drones, and the rest workers."

"They must be tired enough if they always work as fast as these do," I said.

"No," replied Deborah, "they like it. A true worker-bee is never content to be idle. Would you like to see the Nurseries?" continued she.

"Anything you please to show me," I replied.

We then turned through the side gallery into a quiet corner of the hive, where we found curious cradles or cells, of different sizes, made of the purest white wax.

"Here the eggs are laid by our queen," said Deborah, "generally about two hundred a day, but often many more."

"Then your Queen must be busy, as well as the rest of you," I said.

"No one works harder," replied my guide.

I thought of our beautiful Queen, with her delicate wings, and felt that a bee-hive was not much like Fairy-land.

"And will these eggs ever turn into real bees?" I asked.

"Oh yes," said my guide, "in three or four days they hatch into worms."

"Something like caterpillars and butterflies?" I asked.

"A little," she replied, "but in this case the young worms are worth taking care of, as the bees are valuable and industrious persons, while butterflies and idle and useless."

"You are mistaken there," I said, "they are useful to us fairies. In our long flights we could not do without them."

"Ah," said she, "I never heard of it before."

"When the eggs turn into grubs or

worms," continued she, "the workers find plenty to do to take care of them. Each little worm must be carefully fed for five days, with water, and bread, and honey."

"What kind of bread?" I asked.

"Oh, bee-bread," she replied, "nothing else would suit them. The cells are then sealed up, that is, a nice lid or cover is put upon each one, and the little worms must take care of themselves for awhile. Every worm is expected to line its cell neatly, with a silken webbing, and then roll itself up in a cocoon for a time. Ah! we are just in time to see the cells closed."

And, to be sure, there were attendants sealing up the cells, a small white worm in each. I must confess it made me shudder to look at them for I never did like worms! It is so dreadful to meet one in the folds of a rose.

But I fancied the little worms seemed uneasy at the idea of being shut up, and so I told my friend.

"Ah well!" said she, "It is the only way. We all go through with it. Before many days they will come out perfect bees.—Wings and legs all right."

"And must they go to work as soon as they are out," I asked, "and not dance once?"

"No," replied Deborah. "They are not strong enough to fly until they have been fed one or two days. Then they begin to work in good earnest."

I observed that the cells were of different sizes, and inquired the reason.

"The largest and handsomest cells," replied Deborah, "are for the young Queen bees or Princesses. The next size for the drones, and the smallest for the workers."

"Can the cells be used more than once," I asked, "or are they done with, like last-year's bird's nests?"

"The royal cells are all destroyed when they have been once used," she answered, "but the others are cleansed and the silken webbing is left to strengthen them, and they are then better than ever."

"How long does it take to turn from eggs into bees?" I inquired.

"Sixteen days for the Queen bee to become a perfect insect. Twenty-four days for the drones, and twenty-one for the workers," she replied.

"And have the attendants nothing to do but to feed the little ones?" I asked.

"Oh yes," said Deborah, "they attend the Queen, do the fighting, prepare the wax, make the combs or cells, collect the honey by day, and store it by night, and keep the hive in order. The drones lead an idle life. They will die, rather than work. They will not even feed themselves if they can find any one else to do it. And, to tell the truth, like all idlers in a busy community, they are such a bother."

that about once a year we have to kill them off."

"My dear Deborah!" I exclaimed in horror, "you can't mean it!"

"Yes. It is the custom. They don't seem to mind it. But let us look now at the store-rooms," said she, hastily changing the subject, as well she might.

In the store-rooms we saw rows upon rows of cells, fitted one upon another, and every one filled with clear honey, and securely sealed.

"This is our winter store," said my guide; "pure honey, made from the white clover, and put up in the combs by the Workers."

"How do they make the honey?" I asked.

"They gather it," she replied. "We send out thousands of bees every morning, to all the gardens and fields around. Mignonette makes good honey, and so do apple-blossoms. We usually make from two to six pounds a day. The bees often fly as far as two miles from the hive, and then come back loaded with honey and pollen. Each Worker has a tongue or proboscis with which she licks or brushes up the honey, and puts it into her honey bag.

"Stop a moment" said she to a Worker who was hurrying by. "You will observe, my dear, that the hinder legs have something like baskets, on the side, in which the pollen or bee-bread is carried.

"I see it," said I "I have often watched the bees coming out of flowers, covered with yellow dust." I then took the opportunity to mention to her that I lived in a lily-bell, that I sometimes danced the greater part of the night, and that the bees were very much in the habit of waking me at an unreasonable hour in the morning.

She said she would attend to it.

"And how do the bees make wax?" I asked.

"By a process best known to themselves," replied Deborah. "It is not in my line just now, and I am quite sure that I could not describe it to you. The bees say they cannot tell how they do it, but they wish to keep the secret to themselves. The sides of these cells are the one-hundred and eightieth part of an inch in thickness. So you see we must use an immense quantity of wax."

"You must, indeed," I replied. And are the cells always made in this shape?"

"Yes," said she, "they are six-sided. The early bees fixed upon that as the best for strength and economy of space, and no change has been made since. However, Bumble-bees, she added with a slight expression of scorn as though she had said, the Beggars, "have a way which they prefer. They put it up in bags, and store it underground."

This was no news to me. Such a thing

has been done in Fairy-land as to "borrow" a little honey from the bumble-bee, in time of scarcity. But I said nothing.

"And you tell me workers do the fighting. Is there much fighting to do?" I asked. "A great deal," replied Deborah. "We have many enemies, bother on them! Mice, caterpillars, moths, snails, wasps, robber-bees and other evil-minded creatures!" As she said this she buzzed fiercely and unsheathed her sting.

"Look here a moment," said she, "and you will see one of them."

And there in a corner, guarded by a squad of bees, lay a wretched snail prisoner in his own shell. The edge of the shell was covered with a strong cement, which held it firmly to the floor.

"I think we have him now, the villain!" said my guide. "His shell is fastened with propolis."

"What is propolis?" I asked.

"It is bee-glue," she replied, "resin from the buds of the trees."

At this moment we heard a low murmur of "The Queen! the Queen!" and turning, we saw passing through the principal gallery, a magnificent bee, large and more stately than any of her subject, though her wings were much smaller than theirs. The under part of her body was golden, the upper part dark.

She was surrounded by her body guard, and as she passed, her subjects politely backed out of her way, to give her room, and some offered her refreshments in the form of honey.

"What would become of us, if anything should happen to our beloved Queen!" exclaimed Deborah.

"How long has she reigned?" I enquired.

"More than two months," she replied.

"And how much longer may she reign?" I asked.

"She may outlive us all," she replied, "Queens live four years, and workers only from six to nine months. Our old Queen went away with a swarm to another hive. "But now," she continued, "if you will come back to the gallery, I will offer you some of our best honey."

This was tempting, even to a fairy, and we are considered dainty; that is, the crickets and grass-hopper call us so. I tasted some honey and found it delicious.

"This is not like the honey one finds in the flowers," I said.

"We have our way of purifying and preserving it," said Deborah.

"And bee-bread. Can you tell me exactly how to make it?" I asked.

"That is not allowed," she replied, "though it would do no harm, as no one but a bee could ever make it. It is made of the pollen of flowers, and honey and water; and it wants a great deal of kneading. But

it is only fit for the food of young bees. We old ones never eat it."

"And do the young princesses eat it too?" I asked.

"Not at all," she replied. "They are fed upon royal jelly."

"And what is that?" I asked.

"Don't ask it!" she replied. "It is the greatest secret of all. Off goes my head, if I tell you!" "And by the way," said she, perhaps it will be better to say nothing about the Drone business."

"Perhaps it will," I replied, "for I have known our fairy-queen to imprison one of her subjects in a pea-pod a whole hour, for only pinching a gnat."

"Ah! yes," said she, "not our idea of discipline."

She then escorted me to the door of the hive. I thanked her, recommended less work and more dancing, invited her to call on me in my lily-bell, and took my leave, feeling that I had really learned something of the ways of the busy bee, if not how she makes honey. The next day I sent to my friend Deborah, by a butterfly, the finest four-leaved clover I ever saw, knowing that to be the best return I could possibly make for her kindness.—*St. Nicholas*.

Entrance Holes to Hives.

The honey bee ordinarily in its wild state inhabits hollow trees, the entrances to which are either through long slits or large holes, through which it has ample room to pass, without brushing off the pellets that stick out from its sides. A worker bee can pass easily through a hole three-sixteenths of an inch high, but in passing through a round hole of that diameter the pollen would be dislodged. A drone requires a hole nearly $\frac{1}{4}$ of an inch in diameter to pass through, so that in making entrance holes to hives it is evident they should be at least $\frac{1}{4}$ of an inch high, to allow drones, as well as the queen and workers, to pass; but they should not be any higher, if we expect to exclude mice, humble bees, hornets and other enemies of the bee, larger than they are.

Now, did the bee carry its load behind it as the leaf-cutter does, a round hole of $\frac{1}{4}$ of an inch in diameter would be large enough, but the load on each side sticks out from its sides so that more room must be given laterally, even for the passage of a single bee at a time—but as, during active working, there is a constant flow of passing bees, it must be much wider. I find the width should be at least 3 in. But a single hole is not sufficient, even of that width, on account of their peculiar manner of ventilation, by which they are enabled to keep up a constant circulation of fresh air through the hive and regulate the temperature. There should be two such holes

at least four or five inches apart, but on the same side of the hive. All other openings should be closed tight. If thus arranged, the left hand hole will be used for ventilation, and the other for the passage of most of the bees.

Query: Why do bees always use the left hand hole for ventilation?—*Cor. Southern Farmer*.

Movable Homes for Bees.

It is well known that bees may be moved from place to place, and, honey-secreting plants being in abundance, they will store large quantities of honey. A contemporary, in illustrating this, mentions the following circumstances said originally to have appeared in the London Times in 1830. It will of course be taken with a large allowance for "salting" by those who know bees:

As a small vessel was proceeding up the channel from the coast of Cornwall and running near the land, some of the sailors observed a swarm of bees on an island; they steered for it, landed, and took the bees on board; succeeded in hiving them immediately, and proceeded on their voyage; as they sailed along the shore, the bees constantly flew from the vessel to the land, to collect honey, and returned again to their moving hive; and this was continued all the way up the channel.—*Western Rural*.

Honey-Dew.

Amyntas, in his Stations of Asia, quoted by Athenæus, gives a curious account of the manner of collecting this article, which was supposed to be superior to the nectar of the bee, in various parts of the East, particularly in Syria. In some cases they gathered the leaves of trees, chiefly the linden and oak, for on these the dew was most abundantly found, and pressed them together. Others allowed it to drop from the leaves and harden into globules, which, when desirous of using, they broke, and having poured water on them in wooden bowls, drank the mixture. In the neighborhood of Mount Lebanon, honey-dew was collected plentifully several times in the year, being caught by spreading skins under the trees, and shaking into them the liquid from the leaves. The dew was then poured into vessels, and stored away for future use. On these occasions the peasants used to exclaim, "Zeus has been raining honey!"—*History of Insects*.

The rule generally adopted for taking bees is for the second party to furnish hives, take care of the colonies for a term of years, and return old stocks with half of the increase.

American Bee Journal

W. F. CLARKE, EDITOR.

AUGUST, 1874.

Bees and Wasps.

Sir John Lubbock has just read a paper on the above subject at the Linnaean Society. The paper commenced by pointing out, with reference to the power of communication with one another said to be possessed by Hymenoptera, that the observations on record scarcely justify the conclusions which have been drawn from them. In support of the opinion that ants, bees and wasps, possess a true language, it is usually stated that if one bee discovers a store of honey, the others are soon aware of the fact. This, however, does not necessarily imply the possession of any power of describing localities, or anything which could correctly be called a language. If the bees or wasps merely follow their fortunate companions, the matter is simple enough. If, on the contrary, the others are sent, the case will be very different. In order to test this, Sir John kept honey in a given place for some time, in order to satisfy himself that it would not readily be found by the bees, and then brought a bee to the honey, marking it so that he could ascertain whether it brought others or sent them, the latter, of course, implying a much higher order of intelligence and power of communication. After trying the experiment several times with single bees and obtaining only negative results, Sir John Lubbock procured one of Marriott's observatory-hives, which he placed in his sitting-room. The bees had free access to the open air; but there was also a small side or postern door which could be opened at pleasure, and which led into the room. This enables him to feed and mark any particular bees; and he recounted a number of experiments, from which it appeared that comparatively few bees found their own way through the postern, while those which did so the great majority flew to the window, and scarcely any found the honey

for themselves. Those, on the contrary, which were taken to the honey, passed backwards and forwards between it and the hive, making on an average, five journeys in the hour. Sir John had, also, in a similar manner, watched a number of marked wasps, with very similar results. These and other observations of the same tendency appear to show that, even if bees and wasps have the power of informing one another when they discover a store of good food, at any rate they do not habitually do so; and this seemed to him a strong reason for concluding that they are not in the habit of communicating facts. When once wasps had made themselves thoroughly acquainted with their way, their movements were most regular. They spent three minutes supplying themselves with honey, and then flew straight to their nest, returning after an interval of about ten minutes, and thus making, like the bees, about five journeys an hour. During September they began in the morning at about six o'clock, and later when the mornings began to get cold, and continued to work without intermission till dusk. They made, therefore, rather more than fifty journeys in the day. Sir John had also made some experiments on the behavior of bees introduced into strange hives, which seemed to contradict the ordinary statement that strange bees are always recognized and attacked. Another point as to which very different opinions have been propounded is the use of the antennæ. Some entomologists have regarded them as olfactory organs, some as ears, the weight of authority being perhaps in favor of the latter opinion. In experimenting on his wasps and bees, Sir John, to his surprise, could obtain no evidence that they heard at all. He tried them with a shrill pipe, with a whistle, with a violin, with all the sounds of which his voice was capable, doing so, moreover, within a few inches of their heads; but they continued to feed without the slightest appearance of consciousness. Lastly, he recounted some observations showing that bees have the power of distinguishing colors. The relations of insects to flowers imply that the former can distinguish color; but there had been as yet but few direct observations on the point.

Consolidation.

We think we shall give pleasure to a large majority of the bee-keepers of America when we announce that the NATIONAL BEE JOURNAL is with this month's issue united with the "old reliable" AMERICAN BEE JOURNAL. The time has passed when the friends of either JOURNAL, have any points at issue, or any personal feeling in the way of a union, on the common ground of a deep interest in bee-keeping, and an ardent desire to see a JOURNAL devoted to their interests so sustained as to be worthy their support and an object of national pride.

There may have been in the past a division of interests and a difference of opinion upon patent hives which engendered strife and *seemed* to make it necessary to support two journals. Those things belong to the past, and we know that the time has come to bury the hatchet and all agree to make our one JOURNAL what it ought to be—a medium where bee-keepers of experience can exchange opinions upon both practice and theory, and also where beginners may find reliable counsel, and timely hints upon all doubtful points in their new employment.

By the union of these journals we are enabled to secure the services of all the best writers in the World upon the topics of which it specially treats. We shall also be enabled to improve it in all respects, and we are sure that we shall publish a journal which every bee-keeper will feel a pride in supporting.

There is always an increase of strength in a union of interests upon proper grounds, and this consolidation is one so manifestly wise, that we are sure to receive such an endorsement as will make us strong in our aim to issue the best periodical ever sent forth, devoted to any special interest.

We have decided to publish the consolidated BEE JOURNAL not only in Chicago, but also in Cedar Rapids, because Iowa is now the centre of the bee-keeping interests of this country. West of us, the business is being rapidly developed. Our subscribers are numerous in California, Colorado, Nevada, Kansas, Nebraska, and Missouri, while enterprising bee-keepers are found

both north and south of us. It is evident that in these new fields the best pasturage for bees on the continent is found. The State of Iowa has furnished for years some of the most progressive bee-keepers in the country, who are prepared to be safe advisers for beginners at the West.

While we are dependent upon our subscribers for the material aid which is to enable us to carry out our plans for their good, we ask it not as a favor to us, for we shall send out a journal which no bee-keeper can afford to do without at any price.

Seasonable Hints.

If bee pasturage fails at any time by reason of dry weather, it is usually in the early part of this month or latter part of July. Hives that have been gaining in weight, may now be losing daily, and except in the morning and evening, when bees are out for water and pollen, they hang idly about the hives. Rains in most localities have started buckwheat and fall flowers into growth, and if properly managed, bees will soon begin to gather fall stores abundantly. What they need now, is room near the centre of the hives where the queen can deposit her eggs, so that young bees can be reared to supply the places of those that will be used up in gathering the fall honey.

If the combs have not been emptied with the extractor, do it now; not to take away all supplies, but to make empty space for two purposes: 1st, to give the queen room. 2nd, to stimulate the bees to exertion. There is nothing like a "vacuum" to do this.

Even when there is abundant honey in a hive, it sometimes pays to feed sugar syrup or diluted honey, to colonies in which we find the queen has stopped laying, or she has ceased to cherish her eggs. We have known them to begin again, as if it were spring in 24 hours after they had been fed in this way. To use the extractor and return the combs with some honey "loose" upon them will answer the same purpose.

A good supply of water is also essential now. Springs and brooks from which they have had their supply may now be dried up. Your neighbors will complain

for the first time, perhaps, that your bees annoy them by hanging about watering troughs, drains and pump-spouts. Make a place or places, some rods from your hives, where the bees can drink safely, and keep them always supplied. It is well to toll them to their trough by putting pieces of comb, and sweetening the water at first. A little salt thrown in every day keeps the water sweet, and some claim, is beneficial to the bees.

While honey is not secreted in flowers, be cautious about opening hives, lest robbers are attracted. The morning from 7 o'clock to 11 is the time in this month to open hives safely.

Queen raising may proceed now to even better advantage than at any other season, if *care is taken* to make every *nucleus* self-supporting; by this we mean that each queen-rearing hive should have young bees, old bees, brood at all times, and plenty of honey.

Queens may be exchanged now, poor ones killed, either impure or not prolific; and young ones given to them. We never, however, take a queen from a full colony until we can give it one that we are *sure* is a better one. We would not put a queen into such a colony until we had tested it in a nucleus.

The care which we recommend, in order to keep the colony raising brood, is really the first step towards successful wintering; a subject of vital interest now to bee-keepers, and on which we shall have much to say in succeeding numbers. E. S. T.

Bees and the Centennial Fair.

Mr. J. R. Wells in his communication for this number says "nearly every interest that can be mentioned except bee-keeping, has been referred to committees preparatory to the Centennial Fair to be held in Philadelphia 1876, etc."

He is in error in supposing that the bee-keeping interest has been neglected. At the meeting of the National Society at Louisville, last December, a committee was appointed consisting of Gen. Adair, of Kentucky; Mrs. E. S. Tupper, of Iowa; and J. W. Winder, of Cincinnati; with the President of the Society, *ex-officio*; and authorised to appoint sub-committees where ever they deemed proper. The question as to whether bees shall be allowed at the Fair is still an open one, except in observation cages; but there are multitudes of other things—honey extractors, artificial

comb, choicest honey in various forms, queen shipping cages, etc., to say nothing of hives, out of which a most valuable and instructive as well as interesting exhibition may be made. This committee will report at the Pittsburgh meeting, doubtless, and receive aid and counsel as to future preparations.

Honey Dealers.

We have published the articles from Messrs. Bird and Kraschke, complaining of our honey markets and merchants, with great reluctance. We do it "under protest" hoping that no one will feel that we desire to be unjust. Our columns are open to anything that the accused may have to say, as to their reasons for the *seeming* unfair dealing.

We can say ourselves for them, that times have been hard; honey as a luxury which people can do without, has been slow of sale, and it takes time to turn it into money. We know that if Mr. Winder has made no returns "for a few months" as Mr. Bird says, it is because he has received no money from his sales, on which to report.

Joseph Duffeler writes to us that he is willing to publish a card to the effect that Mr. Perrine paid him in full for his honey, even though it was all burned, and he had no insurance on it. We have made collections of Baumeister & Co. for parties and have the promise of money from them, for others, as soon as they can pay it.

Those who send honey to market especially from a distance must remember that expense and time must be expended by the consignee to get it into market. One firm tells us that they have received 1230 lbs. of honey from California. The first bill paid by them was \$57 freight charges! Finding it impossible to sell it in bulk, they went to the expense of \$100 for glass jars and tumblers, and took the trouble to put it into them. It will sell now, and at a profit; but the consignees, doubtless, will begin to grumble before they receive their returns, and then be dissatisfied with scanty profits.

Our advice to those who have honey to sell is to sell it out-right, if possible, even if at a less price. If this is not possible, send it to dealers of established reputation, take receipt for exact weight and until returns are made, exercise charity and patience. In some places where you think there is no sale, a home market may be secured by taking the trouble to put your honey into attractive shape.

Notes AND Queries

QUESTION.

Please inform your subscribers in your next, how far north bees may be kept with profit?
G. O. GRIST.

ANSWER.

Bees are kept very successfully in the northern part of Russia, and winter there out of doors safely. They are also kept in Canada and in the extreme north-east of Maine. In Aroostook County, and as far north as Presque Isle (Maine), bees winter well and are very profitable. Among the mountains of Colorado bees do well. Our opinion is that wherever flowers are found, bees may be kept successfully, if their owners have judgment enough to adapt their care of them to the climate and location.

QUESTION.

1st. Does the queen have a call which she constantly makes her presence known by?

2nd. What state or temperature of the weather it will do to open hives for the purpose of examining brood, etc.?

3rd. The reason why bees cluster before going to the woods?
W. M. A.

ANSWER.

1st. It would seem that she does not, from the fact that we have known a populous hive to be without a queen 24 hours without discovering her absence.

The only times we have heard the call of the queen are when she was under guard of worker bees to prevent her going out with a swarm; and again when we have confined one in our hand for a few moments. It is at times, like the first, that the noise of young queens is heard before a second swarm issues which is called "piping." Sometimes this noise is made by a queen before it hatches from its cell.

2nd. It will do to open hives and take out the comb, whenever bees are flying freely. When they are not, it is safe to leave them undisturbed.

3rd. We think the main reason why bees cluster, before leaving is, that the queen in great swarms, is unable to fly freely when she first leaves the hives, her ovaries being full. We have seen hundreds of eggs on the leaves of a branch where a swarm had settled. Swarms containing young queens fly longer and usually settle higher. They seldom show any disposition to go to the woods at first, as they have no special attraction to the young queen with them and will not follow her as they do the "mother" bee in first swarms.

QUESTION.

How long are we to write you nothing encouraging about our bee-keeping? Here

we are again at the end of our honey year almost, and still the same old story "bees doing poorly." My 48 swarms came out of my cellar in the spring in very fine condition, loosing only one, and only few cases of dysentery; but the spring months carried off 10 or 12 more—some of my best stocks. "Novice" calls it by the right name—"dwindled away." No cause for these losses that I could see. Honey plenty, combs bright; everything in perfect condition. Very little use to talk about the causes of these losses, for I do not think Mr. Editor, we do not, any of us, know. After summer came, swarms came on fast, and swarmed finely; even in fine condition for the largest blow of white clover I have seen for years; and the drouth came with the clover blow; and to-day we are burnt, dried, and roasted. I have got seventy swarms now—that is bees enough. Who cares if they only make honey enough for their own "use."
R. D. AET.

ANSWER.

If you want more honey, do not expect to increase your stocks so much. An increase of 22 swarms on 48 is all you can expect, without looking for much surplus.

Voices from Among the Hives.

N. K. PEDEN, Mitchellville, Tenn., writes: "Bees have done very well here this season. I commenced with 9 colonies in the spring, increased them to 14; and got 750 pounds of honey up to June 10th. Since that, they have been cut off by dry weather."

JOSHUA ARTER, Crestline, O., writes:—"Basswood bloom is over. There were the most flowers on the trees that I ever saw; but the bees did not collect very much after all. White clover was a failure. There was a profuse swarming. Some hives swarmed as much as three times."

E. DIFANY, Norton, O., writes:—"I began with 24 swarms last spring, and now I have 72. Three have not swarmed yet. Some of my first have swarmed again; in fact my bees swarm nearly every day. I expect if it does not get too dry, to run up to 90 or 100 swarms, all natural swarms but one."

J. M. MARVIN, St. Charles, Ill., writes:—"My 140 old stocks have increased to 200. My surplus is five tons. A neighbor's, under my care, 8 stocks increased to 18; surplus 750 lbs. Honey superior in quality. Stocks in splendid condition, and nothing to do, on account of a severe drouth, the worst ever seen in these parts."

CHRISTOPHER GRIMM, Jefferson, Wis., writes:—"I wintered 134 swarms and lost none through the winter; but spring was very cold and wet, so that I had to unite four swarms, which got very weak with the others. I have got, at this date 67 natural swarms and all are doing finely. The basswood, or lime, are nearly through blossom in this part of the country."

M. T. EMBRY, Poplar Bluff, Tenn., writes:—"I went into winter quarters last fall with 57 colonies. They went through safely with the loss of about 7 or 8 queens. I sold two colonies. The spring was very unfavorable up to the 1st of May. Since that time we have had but three light showers. I have taken about 2500 lbs. of honey from them. Some of my bees have considerable honey yet to spare."

American Bee Journal

THOMAS G. NEWMAN, MANAGER.

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THOMAS G. NEWMAN.

Cedar Rapids, Iowa.

Special Notice.

During the past ten months of "Panic," the receipts of the AMERICAN BEE JOURNAL have been very light. We have cheerfully "carried" thousands of our subscribers, and now trust that they, will respond as soon as possible, as we have obligations that must be met *at once*. Many subscriptions ran out with the JUNE number, and now we hope to hear from them, as well as from those that expired before that time.

We shall continue to send the AMERICAN BEE JOURNAL to all our subscribers until we get an explicit order for a discontinuance, and we hope those who not wish to continue their subscriptions will notify us by letter or Postal card, either when they expire or before that time.

We have purchased of Geo. S. Wagner Esq. and the Rev. W. F. Clarke all the back subscription and advertising accounts, and hence everything due to the AMERICAN BEE JOURNAL of whatever kind or nature *must* now to be paid to the undersigned.

We hope those who are in arrears will send the amounts due us, during this month, as we are in pressing need of it, to cancel obligations already given for these very accounts. Who will respond?

THOMAS G. NEWMAN, Publisher.

We have received a Postal Order from Shanon, Wis., in an envelope containing nothing else. We do not know from whom it came, nor for what it was intended. Will some one inform us?

Honey Markets.

CHICAGO.—Choice white comb honey, 28 @30c; fair to good, 24@28c. Extracted, choice white, 14@16c; fair to good, 10@12c; strained, 8@10c.

CINCINNATI.—Quotations from Chas. F. Muth, 976 Central Ave.

Comb honey, 15@35c, according to the condition of the honey and the size of the box or frame. Extracted choice white clover honey, 16c. $\frac{7}{8}$ lb.

ST. LOUIS.—Quotations from W. G. Smith 419 North Main st.

Choice white comb, 25@29c; fair to good, 16@22c. Extracted choice white clover, 16@18c. Choice basswood honey, 14@16c; fair to good, extracted, 8@12c; strained, 6@10c.

NEW YORK.—Quotations from E. A. Walker, 135 Oakland st., Greenport, L. I.

White honey in small glass boxes, 25c; dark 15@20c. Strained honey, 8@12c. Cuban honey, \$1.00 $\frac{7}{8}$ gal. St. Domingo, and Mexican, 90@95 $\frac{7}{8}$ gal.

SAN FRANCISCO.—Quotations from Sterns and Smith, 423 Front st.

Southern Coast Honey is coming in very freely, and the crop will be very large. We are selling comb in two pound tins, two dozen in a case, for shipping at \$3.75 per dozen. Sold mostly for the Montana and Idaho trade. Strained honey, in 5 gallon coal oil tins, 8 and 10 cents $\frac{7}{8}$ lb. We have sold several lbs. of choice Montana strained at 11 cents. Comb honey in frames 14 @ 22 cents, according to quality.

Books for Bee-Keepers may be obtained at this office.

Not one letter in ten thousand is lost by mail if rightly directed.

Single copies of the AMERICAN BEE JOURNAL are worth 20 cents each.

Upon the wrapper of every copy of the JOURNAL will be found the date at which subscriptions expire.

Any numbers that fail to reach subscribers by fault of mail, we are at all times ready to send, on application, free of charge.

The German Bee-Sting Cure can be obtained at this office. Sent by Express for \$1.00. It cannot be sent by mail. See notice.

Our subscribers in Europe, can *now* procure Postal Money Orders on Chicago. This plan of sending money is *safe* and economical.

FRANK SEARLES, Hadley, Will Co., Ills., has 50 swarms of Italian Bees which he will sell for \$8.00 each, in any amount, if sent for soon.

Subscribers wishing to change their post-office address, should mention their *old* address, as well as the one to which they wish it changed.

Persons writing to this office should either write their Name, Post-office, County and State plainly, or else cut off the label from the wrapper of their paper and enclose it.